#3

SEQUENCE LISTING

<110> Georgopoulos, Katia

<120> IKAROS REGULATORY ELEMENTS AND USES
THEREOF

<130> 10287-067001

<140> US 09/755,830
<141> 2001-01-05

<150> US 08/283,300
<151> 1994-07-29

<150> US 08/238,212
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<150> US 08/121,438
<151> 1993-09-14

<150> US 07/946,233
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ccactcagag gggactcaga gcaagtctag atttgtgtgg cagagagaga cagctctcgt 180
ttggccttgg ggaggcacaa gtctgttgat aacctgaaga ca atg gat gtc gat 234
Met Asp Val Asp
1

gag ggt caa gac atg tcc caa gtt tca gga aag gag agc ccc cca gtc 282
Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu Ser Pro Pro Val
5 10 15 20

agt gac act cca gat gaa ggg gat gag ccc atg cct gtc cct gag gac 330
Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro Val Pro Glu Asp
25 30 35

ctg tcc act acc tct gga gca cag cag aac tcc aag agt gat cga ggc 378
Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys Ser Asp Arg Gly

40 45 50

atg ggt gaa cgg cct ttc cag tgc aac cag tct ggg gcc tcc ttt acc 426
Met Gly Glu Arg Pro Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr
55 60 65

cag aaa ggc aac ctc ctg cgg cac atc aag ctg cac tcg ggt gag aag 474
Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His Ser Gly Glu Lys
70 75 80

ccc ttc aaa tgc cat ctt tgc aac tat gcc tgc cgc cgg agg gac gcc 522
Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala
85 90 95 100

ctc acc ggc cac ctg agg acg cac tcc gtt ggt aag cct cac aaa tgt 570
Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys Pro His Lys Cys
105 110 115

gga tat tgt ggc cgg agc tat aaa cag cga agc tct tta gag gag cat 618
Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His
120 125 130

aaa gag cga tgc cac aac tac ttg gaa agc atg ggc ctt ccg ggc gtg 666
Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly Leu Pro Gly Val
135 140 145

tgc cca gtc att aag gaa gaa act aac cac aac gag atg gca gaa gac 714
Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp
150 155 160

ctg tgc aag ata gga gca gag agg tcc ctt gtc ctg gac agg ctg gca 762
Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala
165 170 175 180

agc aat gtc gcc aaa cgt aag agc tct atg cct cag aaa ttt ctt gga 810
Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly
185 190 195

gac aag tgc ctg tca gac atg ccc tat gac agt gcc aac tat gag aag 858
Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys
200 205 210

gag gat atg atg aca tcc cac gtg atg gac cag gcc atc aac aat gcc 906
Glu Asp Met Met Thr Ser His Val Met Asp Gln Ala Ile Asn Asn Ala
215 220 225

atc aac tac ctg ggg gct gag tcc ctg cgc cca ttg gtg cag aca ccc 954
Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro
230 235 240

ccc ggt agc tcc gag gtg gtg cca gtc atc agc tcc atg tac cag ctg 1002
Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu
245 250 255 260

cac aag ccc ccc tca gat ggc ccc cca cgg tcc aac cat tca gca cag 1050
His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln
265 270 275

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gac gcc gtg gat aac ttg ctg ctg ctg tcc aag gcc aag tct gtg tca     1098
Asp Ala Val Asp Asn Leu Leu Leu Leu Ser Lys Ala Lys Ser Val Ser
            280                 285                 290

tcg gag cga gag gcc tcc ccg agc aac agc tgc caa gac tcc aca gat     1146
Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp
        295                 300                 305

aca gag agc aac gcg gag gaa cag cgc agc ggc ctt atc tac cta acc     1194
Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr
    310                 315                 320

aac cac atc aac ccg cat gca cgc aat ggg ctg gct ctc aag gag gag     1242
Asn His Ile Asn Pro His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu
325                 330                 335                 340

cag cgc gcc tac gag gtg ctg agg gcg gcc tca gag aac tcg cag gat     1290
Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp
                345                 350                 355

gcc ttc cgt gtg gtc agc acg agt ggc gag cag ctg aag gtg tac aag     1338
Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys
            360                 365                 370

tgc gaa cac tgc cgc gtg ctc ttc ctg gat cac gtc atg tat acc att     1386
Cys Glu His Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile
        375                 380                 385

cac atg ggc tgc cat ggc tgc cat ggc ttt cgg gat ccc ttt gag tgt     1434
His Met Gly Cys His Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys
    390                 395                 400

aac atg tgt ggt tat cac agc cag gac agg tac gag ttc tca tcc cat     1482
Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His
405                 410                 415                 420

atc acg cgg ggg gag cat cgt tac cac ctg agc taaacccagc caggccccac   1535
Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser
                425                 430

tgaagcacaa agatagctgg ttatgcctcc ttcccggcag ctggacccac agcggacaat   1595
gtgggagtgg atttgcaggc agcatttgtt cttttatgtt ggttgtttgg cgtttcattt   1655
gcgttggaag ataagttttt aatgttagtg acaggattgc attgcatcag caacattcac   1715
aacatccatc cttctagcca gttttgttca ctggtagctg aggtttcccg gatatgtggc   1775
ttcctaacac tct                                                     1788
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<213> Homo sapiens

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<221> CDS
<222> (1)...(1386)
<223> hIk-1

<400> 2

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Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn Gly Arg Ala Cys
 1               5                  10                  15

gaa atg aat ggg gaa gaa tgt gcg gag gat tta cga atg ctt gat gcc        96
Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg Met Leu Asp Ala
            20                  25                  30

tcg gga gag aaa atg aat ggc tcc cac agg gac caa ggc agc tcg gct       144
Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln Gly Ser Ser Ala
        35                  40                  45

ttg tcg gga gtt gga ggc att cga ctt cct aac gga aaa cta aag tgt       192
Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly Lys Leu Lys Cys
    50                  55                  60

gat atc tgt ggg atc att tgc atc ggg ccc aat gtg ctc atg gtt cac       240
Asp Ile Cys Gly Ile Ile Cys Ile Gly Pro Asn Val Leu Met Val His
65                  70                  75                  80

aaa aga agc cac act gga gaa cgg ccc ttc cag tgc aat cag tgc ggg       288
Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly
                85                  90                  95

gcc tca ttc acc cag aag ggc aac ctg ctc cgg cac atc aag ctg cat       336
Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His
            100                 105                 110

tcc ggg gag aag ccc ttc aaa tgc cac ctc tgc aac tac gcc tgc cgc       384
Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg
        115                 120                 125

cgg agg gac gcc ctc act ggc cac ctg agg acg cac tcc gtt ggt aaa       432
Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys
    130                 135                 140

cct cac aaa tgt gga tat tgt ggc cga agc tat aaa cag cga acg tct       480
Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Thr Ser
145                 150                 155                 160

tta gag gaa cat aaa gag cgc tgc cac aac tac ttg gaa agc atg ggc       528
Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly
                165                 170                 175

ctt ccg ggc aca ctg tac cca gtc att aaa gaa gaa act aag cac agt       576
Leu Pro Gly Thr Leu Tyr Pro Val Ile Lys Glu Glu Thr Lys His Ser
            180                 185                 190

gaa atg gca gaa gac ctg tgc aag ata gga tca gag aga tct ctc gtg       624
Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu Val
        195                 200                 205

ctg gac aga cta gca agt aat gtc gcc aaa cgt aag agc tct atg cct       672
Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro
    210                 215                 220
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cag aaa ttt ctt ggg gac aag ggc ctg tcc gac acg ccc tac gac agt      720
Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp Ser
225                 230                 235                 240

gcc acg tac gag aag gag aac gaa atg atg aag tcc cac gtg atg gac      768
Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met Asp
                245                 250                 255

caa gcc atc aac aac gcc atc aac tac ctg ggg gcc gag tcc ctg cgc      816
Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg
            260                 265                 270

ccg ctg gtg cag acg ccc ccg ggc ggt tcc gag gtg gtc ccg gtc atc      864
Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val Ile
        275                 280                 285

agc ccg atg tac cag ctg cac agg cgc tcg gag ggc acc ccg cgc tcc      912
Ser Pro Met Tyr Gln Leu His Arg Arg Ser Glu Gly Thr Pro Arg Ser
    290                 295                 300

aac cac tcg gcc cag gac agc gcc gtg gag tac ctg ctg ctg ctc tcc      960
Asn His Ser Ala Gln Asp Ser Ala Val Glu Tyr Leu Leu Leu Leu Ser
305                 310                 315                 320

aag gcc aag ttg gtg ccc tcg gag cgc gag gcg tcc ccg agc aac agc     1008
Lys Ala Lys Leu Val Pro Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser
                325                 330                 335

tgc caa gac tcc acg gac acc gag agc aac aac gag gag cag cgc agc     1056
Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Asn Glu Glu Gln Arg Ser
            340                 345                 350

ggt ctt atc tac ctg acc aac cac atc gcc cga cgc gcg caa cgc gtg     1104
Gly Leu Ile Tyr Leu Thr Asn His Ile Ala Arg Arg Ala Gln Arg Val
        355                 360                 365

tcg ctc aag gag gag cac cgc gcc tac gac ctg ctg cgc gcc gcc tcc     1152
Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala Ser
    370                 375                 380

gag aac tcg cag gac gcg ctc cgc gtg gtc agc acc agc ggg gag cag     1200
Glu Asn Ser Gln Asp Ala Leu Arg Val Val Ser Thr Ser Gly Glu Gln
385                 390                 395                 400

atg aag gtg tac aag tgc gaa cac tgc cgg gtg ctc ttc ctg gat cac     1248
Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His
                405                 410                 415

gtc atg tac acc atc cac atg ggc tgc cac ggc ttc cgt gat cct ttt     1296
Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro Phe
            420                 425                 430

gag tgc aac atg tgc ggc tac cac agc cag gac cgg tac gag ttc tcg     1344
Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser
        435                 440                 445

tcg cac ata acg cga ggg gag cac cgc ttc cac atg agc taa             1386
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<223> mIk-3

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 1               5                  10                  15

agc ccc cca gtc agt gac act cca gat gaa ggg gat gag ccc atg cct       96
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
            20                  25                  30

gtc cct gag gac ctg tcc act acc tct gga gca cag cag aac tcc aag      144
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
        35                  40                  45

agt gat cga ggc atg gcc agt aat gtt aaa gta gag act cag agt gat      192
Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp
    50                  55                  60

gaa gag aat ggg cgt gcc tgt gaa atg aat ggg gaa gaa tgt gca gag      240
Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu
65                  70                  75                  80

gat tta cga atg ctt gat gcc tcg gga gag aaa atg aat ggc tcc cac      288
Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His
                85                  90                  95

agg gac caa ggc agc tcg gct ttg tca gga gtt gga ggc att cga ctt      336
Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu
            100                 105                 110

cct aac gga aaa cta aag tgt gat atc tgt ggg atc gtt tgc atc ggg      384
Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly
        115                 120                 125

ccc aat gtg ctc atg gtt cac aaa aga agt cat act ggt gaa cgg cct      432
Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro
    130                 135                 140

ttc cag tgc aac cag tct ggg gcc tcc ttt acc cag aaa ggc aac ctc      480
Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu
145                 150                 155                 160

ctg cgg cac atc aag ctg cac tcg ggt gag aag ccc ttc aaa tgc cat      528
Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His
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165 170 175

ctt tgc aac tat gcc tgc cgc cgg agg gac gcc ctc acc ggc cac ctg 576
Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu
180 185 190

agg acg cac tcc gga gac aag tgc ctg tca gac atg ccc tat gac agt 624
Arg Thr His Ser Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser
195 200 205

gcc aac tat gag aag gag gat atg atg aca tcc cac gtg atg gac cag 672
Ala Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met Asp Gln
210 215 220

gcc atc aac aat gcc atc aac tac ctg ggg gct gag tcc ctg cgc cca 720
Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro
225 230 235 240

ttg gtg cag aca ccc ccc ggt agc tcc gag gtg gtg cca gtc atc agc 768
Leu Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser
245 250 255

tcc atg tac cag ctg cac aag ccc ccc tca gat ggc ccc cca cgg tcc 816
Ser Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser
260 265 270

aac cat tca gca cag gac gcc gtg gat aac ttg ctg ctg ctg tcc aag 864
Asn His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Leu Ser Lys
275 280 285

gcc aag tct gtg tca tcg gag cga gag gcc tcc ccg agc aac agc tgc 912
Ala Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys
290 295 300

caa gac tcc aca gat aca gag agc aac gcg gag gaa cag cgc agc ggc 960
Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly
305 310 315 320

ctt atc tac cta acc aac cac atc aac ccg cat gca cgc aat ggg ctg 1008
Leu Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn Gly Leu
325 330 335

gct ctc aag gag gag cag cgc gcc tac gag gtg ctg agg gcg gcc tca 1056
Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser
340 345 350

gag aac tcg cag gat gcc ttc cgt gtg gtc agc acg agt ggc gag cag 1104
Glu Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln
355 360 365

ctg aag gtg tac aag tgc gaa cac tgc cgc gtg ctc ttc ctg gat cac 1152
Leu Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His
370 375 380

gtc atg tat acc att cac atg ggc tgc cat ggc tgc cat ggc ttt cgg 1200
Val Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly Phe Arg
385 390 395 400

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gat ccc ttt gag tgt aac atg tgt ggt tat cac agc cag gac agg tac      1248
Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr
                405                 410                 415

gag ttc tca tcc cat atc acg cgg ggg gag cat cgt tac cac ctg agc      1296
Glu Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser
            420                 425                 430


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<213> Mus musculus

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<223> mIk-1

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ccactcagag gggactcaga gcaagtctag atttgtgtgg cagagagaga cagctctcgt     180
ttggccttgg ggaggcacaa gtctgttgat aacctgaaga ca atg gat gtc gat        234
                                               Met Asp Val Asp
                                                1

gag ggt caa gac atg tcc caa gtt tca gga aag gag agc ccc cca gtc       282
Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu Ser Pro Pro Val
 5                  10                  15                  20

agt gac act cca gat gaa ggg gat gag ccc atg cct gtc cct gag gac       330
Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro Val Pro Glu Asp
                25                  30                  35

ctg tcc act acc tct gga gca cag cag aac tcc aag agt gat cga ggc       378
Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys Ser Asp Arg Gly
            40                  45                  50

atg gcc agt aat gtt aaa gta gag act cag agt gat gaa gag aat ggg       426
Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn Gly
        55                  60                  65

cgt gcc tgt gaa atg aat ggg gaa gaa tgt gca gag gat tta cga atg       474
Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg Met
    70                  75                  80

ctt gat gcc tcg gga gag aaa atg aat ggc tcc cac agg gac caa ggc       522
Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln Gly
 85                 90                  95                 100

agc tcg gct ttg tca gga gtt gga ggc att cga ctt cct aac gga aaa       570
Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly Lys
                105                 110                 115

cta aag tgt gat atc tgt ggg atc gtt tgc atc ggg ccc aat gtg ctc       618
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Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly Pro Asn Val Leu
120 125 130

atg gtt cac aaa aga agt cat act ggt gaa cgg cct ttc cag tgc aac 666
Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys Asn
135 140 145

cag tct ggg gcc tcc ttt acc cag aaa ggc aac ctc ctg cgg cac atc 714
Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile
150 155 160

aag ctg cac tcg ggt gag aag ccc ttc aaa tgc cat ctt tgc aac tat 762
Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr
165 170 175 180

gcc tgc cgc cgg agg gac gcc ctc acc ggc cac ctg agg acg cac tcc 810
Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser
185 190 195

gtt ggt aag cct cac aaa tgt gga tat tgt ggc cgg agc tat aaa cag 858
Val Gly Lys Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln
200 205 210

cga agc tct tta gag gag cat aaa gag cga tgc cac aac tac ttg gaa 906
Arg Ser Ser Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu
215 220 225

agc atg ggc ctt ccg ggc gtg tgc cca gtc att aag gaa gaa act aac 954
Ser Met Gly Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn
230 235 240

cac aac gag atg gca gaa gac ctg tgc aag ata gga gca gag agg tcc 1002
His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser
245 250 255 260

ctt gtc ctg gac agg ctg gca agc aat gtc gcc aaa cgt aag agc tct 1050
Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser
265 270 275

atg cct cag aaa ttt ctt gga gac aag tgc ctg tca gac atg ccc tat 1098
Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr
280 285 290

gac agt gcc aac tat gag aag gag gat atg atg aca tcc cac gtg atg 1146
Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met
295 300 305

gac cag gcc atc aac aat gcc atc aac tac ctg ggg gct gag tcc ctg 1194
Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu
310 315 320

cgc cca ttg gtg cag aca ccc ccc ggt agc tcc gag gtg gtg cca gtc 1242
Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val
325 330 335 340

atc agc tcc atg tac cag ctg cac aag ccc ccc tca gat ggc ccc cca 1290
Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro

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                345                 350                 355

cgg tcc aac cat tca gca cag gac gcc gtg gat aac ttg ctg ctg ctg     1338
Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Leu
            360                 365                 370

tcc aag gcc aag tct gtg tca tcg gag cga gag gcc tcc ccg agc aac     1386
Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn
        375                 380                 385

agc tgc caa gac tcc aca gat aca gag agc aac gcg gag gaa cag cgc     1434
Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg
    390                 395                 400

agc ggc ctt atc tac cta acc aac cac atc aac ccg cat gca cgc aat     1482
Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn
405                 410                 415                 420

ggg ctg gct ctc aag gag gag cag cgc gcc tac gag gtg ctg agg gcg     1530
Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala
                425                 430                 435

gcc tca gag aac tcg cag gat gcc ttc cgt gtg gtc agc acg agt ggc     1578
Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly
            440                 445                 450

gag cag ctg aag gtg tac aag tgc gaa cac tgc cgc gtg ctc ttc ctg     1626
Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu
        455                 460                 465

gat cac gtc atg tat acc att cac atg ggc tgc cat ggc tgc cat ggc     1674
Asp His Val Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly
    470                 475                 480

ttt cgg gat ccc ttt gag tgt aac atg tgt ggt tat cac agc cag gac     1722
Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp
485                 490                 495                 500

agg tac gag ttc tca tcc cat atc acg cgg ggg gag cat cgt tac cac     1770
Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His
                505                 510                 515

ctg agc taaacccagc caggccccac tgaagcacaa agatagctgg ttatgcctcc     1826
Leu Ser


ttcccggcag ctggacccac agcggacaat gtgggagtgg atttgcaggc agcatttgtt   1886
cttttatgtt ggttgtttgg cgtttcattt gcgttggaag ataagttttt aatgttagtg   1946
acaggattgc attgcatcag caacattcac aacatccatc cttctagcca gttttgttca   2006
ctggtagctg aggtttcccg gatatgtggc ttcctaacac tct                     2049

<210> 5
<211> 1170
<212> DNA
<213> Mus musculus

<220>
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<221> CDS
<222> (1)...(1170)
<223> mIk-4

<400> 5
atg gat gtc gat gag ggt caa gac atg tcc caa gtt tca gga aag gag 48
Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
1 5 10 15

agc ccc cca gtc agt gac act cca gat gaa ggg gat gag ccc atg cct 96
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
20 25 30

gtc cct gag gac ctg tcc act acc tct gga gca cag cag aac tcc aag 144
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
35 40 45

agt gat cga ggc atg ggt gaa cgg cct ttc cag tgc aac cag tct ggg 192
Ser Asp Arg Gly Met Gly Glu Arg Pro Phe Gln Cys Asn Gln Ser Gly
50 55 60

gcc tcc ttt acc cag aaa ggc aac ctc ctg cgg cac atc aag ctg cac 240
Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His
65 70 75 80

tcg ggt gag aag ccc ttc aaa tgc cat ctt tgc aac tat gcc tgc cgc 288
Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg
85 90 95

cgg agg gac gcc ctc acc ggc cac ctg agg acg cac tcc gtc att aag 336
Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Ile Lys
100 105 110

gaa gaa act aac cac aac gag atg gca gaa gac ctg tgc aag ata gga 384
Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly
115 120 125

gca gag agg tcc ctt gtc ctg gac agg ctg gca agc aat gtc gcc aaa 432
Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys
130 135 140

cgt aag agc tct atg cct cag aaa ttt ctt gga gac aag tgc ctg tca 480
Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser
145 150 155 160

gac atg ccc tat gac agt gcc aac tat gag aag gag gat atg atg aca 528
Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr
165 170 175

tcc cac gtg atg gac cag gcc atc aac aat gcc atc aac tac ctg ggg 576
Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly
180 185 190

gct gag tcc ctg cgc cca ttg gtg cag aca ccc ccc ggt agc tcc gag 624
Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu
195 200 205

```
gtg gtg cca gtc atc agc tcc atg tac cag ctg cac aag ccc ccc tca      672
Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser
    210                 215                 220

gat ggc ccc cca cgg tcc aac cat tca gca cag gac gcc gtg gat aac      720
Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn
225                 230                 235                 240

ttg ctg ctg ctg tcc aag gcc aag tct gtg tca tcg gag cga gag gcc      768
Leu Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala
                245                 250                 255

tcc ccg agc aac agc tgc caa gac tcc aca gat aca gag agc aac gcg      816
Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala
            260                 265                 270

gag gaa cag cgc agc ggc ctt atc tac cta acc aac cac atc aac ccg      864
Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro
        275                 280                 285

cat gca cgc aat ggg ctg gct ctc aag gag gag cag cgc gcc tac gag      912
His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu
    290                 295                 300

gtg ctg agg gcg gcc tca gag aac tcg cag gat gcc ttc cgt gtg gtc      960
Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val
305                 310                 315                 320

agc acg agt ggc gag cag ctg aag gtg tac aag tgc gaa cac tgc cgc     1008
Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg
                325                 330                 335

gtg ctc ttc ctg gat cac gtc atg tat acc att cac atg ggc tgc cat     1056
Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly Cys His
            340                 345                 350

ggc tgc cat ggc ttt cgg gat ccc ttt gag tgt aac atg tgt ggt tat     1104
Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr
        355                 360                 365

cac agc cag gac agg tac gag ttc tca tcc cat atc acg cgg ggg gag     1152
His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu
    370                 375                 380

cat cgt tac cac ctg agc                                            1170
His Arg Tyr His Leu Ser
385                 390
```

<210> 6
<211> 1128
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)...(1128)

<223> mIk-5

<400> 6
atg gat gtc gat gag ggt caa gac atg tcc caa gtt tca gga aag gag 48
Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
1 5 10 15

agc ccc cca gtc agt gac act cca gat gaa ggg gat gag ccc atg cct 96
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
20 25 30

gtc cct gag gac ctg tcc act acc tct gga gca cag cag aac tcc aag 144
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
35 40 45

agt gat cga ggc atg gcc agt aat gtt aaa gta gag act cag agt gat 192
Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp
50 55 60

gaa gag aat ggg cgt gcc tgt gaa atg aat ggg gaa gaa tgt gca gag 240
Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu
65 70 75 80

gat tta cga atg ctt gat gcc tcg gga gag aaa atg aat ggc tcc cac 288
Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His
85 90 95

agg gac caa ggc agc tcg gct ttg tca gga gtt gga ggc att cga ctt 336
Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu
100 105 110

cct aac gga aaa cta aag tgt gat atc tgt ggg atc gtt tgc atc ggg 384
Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly
115 120 125

ccc aat gtg ctc atg gtt cac aaa aga agt cat act gga gac aag tgc 432
Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Asp Lys Cys
130 135 140

ctg tca gac atg ccc tat gac agt gcc aac tat gag aag gag gat atg 480
Leu Ser Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met
145 150 155 160

atg aca tcc cac gtg atg gac cag gcc atc aac aat gcc atc aac tac 528
Met Thr Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr
165 170 175

ctg ggg gct gag tcc ctg cgc cca ttg gtg cag aca ccc ccc ggt agc 576
Leu Gly Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser
180 185 190

tcc gag gtg gtg cca gtc atc agc tcc atg tac cag ctg cac aag ccc 624
Ser Glu Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro
195 200 205

ccc tca gat ggc ccc cca cgg tcc aac cat tca gca cag gac gcc gtg 672
Pro Ser Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val

210 215 220

gat aac ttg ctg ctg ctg tcc aag gcc aag tct gtg tca tcg gag cga 720
Asp Asn Leu Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg
225 230 235 240

gag gcc tcc ccg agc aac agc tgc caa gac tcc aca gat aca gag agc 768
Glu Ala Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser
245 250 255

aac gcg gag gaa cag cgc agc ggc ctt atc tac cta acc aac cac atc 816
Asn Ala Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile
260 265 270

aac ccg cat gca cgc aat ggg ctg gct ctc aag gag gag cag cgc gcc 864
Asn Pro His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala
275 280 285

tac gag gtg ctg agg gcg gcc tca gag aac tcg cag gat gcc ttc cgt 912
Tyr Glu Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg
290 295 300

gtg gtc agc acg agt ggc gag cag ctg aag gtg tac aag tgc gaa cac 960
Val Val Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His
305 310 315 320

tgc cgc gtg ctc ttc ctg gat cac gtc atg tat acc att cac atg ggc 1008
Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly
325 330 335

tgc cat ggc tgc cat ggc ttt cgg gat ccc ttt gag tgt aac atg tgt 1056
Cys His Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys
340 345 350

ggt tat cac agc cag gac agg tac gag ttc tca tcc cat atc acg cgg 1104
Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg
355 360 365

ggg gag cat cgt tac cac ctg agc 1128
Gly Glu His Arg Tyr His Leu Ser
370 375

<210> 7
<211> 1004
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)...(1005)

<400> 7
gga gaa cgg ccc ttc cag tgc aat cag tgc ggg gcc tca ttc acc cag 48
Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln
1 5 10 15

```
aag ggc aac ctg ctc cgg cac atc aag ctg cat tcc ggg gag aag ccc        96
Lys Gly Asn Leu Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro
            20                  25                  30

ttc aaa tgc cac ctc tgc aac tac gcc tgc cgc cgg agg gac gcc ctc       144
Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu
        35                  40                  45

act ggc cac ctg agg acg cac tcc gtc att aaa gaa gaa act aag cac       192
Thr Gly His Leu Arg Thr His Ser Val Ile Lys Glu Glu Thr Lys His
    50                  55                  60

agt gaa atg gca gaa gac ctg tgc aag ata gga tca gag aga tct ctc       240
Ser Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu
65                  70                  75                  80

gtg ctg gac aga cta gca agt aat gtc gcc aaa cgt aag agc tct atg       288
Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met
                85                  90                  95

cct cag aaa ttt ctt ggg gac aag ggc ctg tcc gac acg ccc tac gac       336
Pro Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp
            100                 105                 110

agt gcc acg tac gag aag gag aac gaa atg atg aag tcc cac gtg atg       384
Ser Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met
        115                 120                 125

gac caa gcc atc aac aac gcc atc aac tac ctg ggg gcc gag tcc ctg       432
Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu
    130                 135                 140

cgc ccg ctg gtg cag acg ccc ccg ggc ggt tcc gag gtg gtc ccg gtc       480
Arg Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val
145                 150                 155                 160

atc agc ccg atg tac cag ctg cac agg cgc tcg gag ggc acc ccg cgc       528
Ile Ser Pro Met Tyr Gln Leu His Arg Arg Ser Glu Gly Thr Pro Arg
                165                 170                 175

tcc aac cac tcg gcc cag gac agc gcc gtg gag tac ctg ctg ctg ctc       576
Ser Asn His Ser Ala Gln Asp Ser Ala Val Glu Tyr Leu Leu Leu Leu
            180                 185                 190

tcc aag gcc aag ttg gtg ccc tcg gag cgc gag gcg tcc ccg agc aac       624
Ser Lys Ala Lys Leu Val Pro Ser Glu Arg Glu Ala Ser Pro Ser Asn
        195                 200                 205

agc tgc caa gac tcc acg gac acc gag agc aac aac gag gag cag cgc       672
Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Asn Glu Glu Gln Arg
    210                 215                 220

agc ggt ctt atc tac ctg acc aac cac atc gcc cga cgc gcg caa cgc       720
Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Ala Arg Arg Ala Gln Arg
225                 230                 235                 240

gtg tcg ctc aag gag gag cac cgc gcc tac gac ctg ctg cgc gcc gcc       768
```

```
Val Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala
                245                     250                     255

tcc gag aac tcg cag gac gcg ctc cgc gtg gtc agc acc agc ggg gag       816
Ser Glu Asn Ser Gln Asp Ala Leu Arg Val Val Ser Thr Ser Gly Glu
            260                     265                     270

cag atg aag gtg tac aag tgc gaa cac tgc cgg gtg ctc ttc ctg gat       864
Gln Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp
        275                     280                     285

cac gtc atg tac acc atc cac atg ggc tgc cac ggc ttc cgt gat cct       912
His Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro
    290                     295                     300

ttt gag tgc aac atg tgc ggc tac cac agc cag gac cgg tac gag ttc       960
Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe
305                     310                     315                     320

tcg tcg cac ata acg cga ggg gag cac cgc ttc cac atg agc ta           1004
Ser Ser His Ile Thr Arg Gly Glu His Arg Phe His Met Ser Ser
                325                     330                     335


<210> 8
<211> 103
<212> DNA
<213> Mus musculus

<400> 8
tttggttata aatgtattga ttgcatcccc attacccaga aggccaatat ttaattggag        60
tcttaactca attgtgtttt cgtcagttgg taagcctcac aaa                         103

<210> 9
<211> 116
<212> DNA
<213> Mus musculus

<400> 9
atgggccttc cgggcatgta cccaggtaag cactgaggcc ctgctgagct gcacccctcc        60
ccctcccagc gcctgggcca ggatggggct ctgtggcctg tttcagccac aggagg          116

<210> 10
<211> 94
<212> DNA
<213> Mus musculus

<400> 10
ccttgttgct gctgtgttgc tatcttgtga cttatttttg cagtgacact gagtggcctc        60
ctgtgttgtc tctttcagcc agtaatgtta aagt                                    94

<210> 11
<211> 120
<212> DNA
<213> Mus musculus

<400> 11
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gagccctggc agatgtgtcc tgtctgctgt gacactagaa caccattcaa cccctgggtg 60
tagatttcac ttatgaccat ctacttcccg caggagacaa gtgcctgtca gacatgccct 120

<210> 12
<211> 120
<212> DNA
<213> Mus musculus

<400> 12
acatgtgtgg ttatcacagc caggacaggt acgagttctc atcccatatc acgcgggggg 60
agcatcgtta ccacctgagc taaacccagc caggccccac tgaagcacaa agatagctgg 120

<210> 13
<211> 470
<212> PRT
<213> Artificial Sequence

<220>
<223> consensus sequence

<221> VARIANT
<222> (1)...(470)
<223> Xaa = Any Amino Acid

<400> 13
Xaa Xaa Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn
1 5 10 15
Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg
20 25 30
Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln
35 40 45
Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly
50 55 60
Lys Leu Lys Cys Asp Ile Cys Gly Ile Xaa Cys Ile Gly Pro Asn Val
65 70 75 80
Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys
85 90 95
Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His
100 105 110
Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn
115 120 125
Tyr Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His
130 135 140
Ser Val Gly Lys Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys
145 150 155 160
Gln Arg Xaa Ser Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu
165 170 175
Glu Ser Met Gly Leu Pro Gly Xaa Xaa Xaa Pro Val Ile Lys Glu Glu
180 185 190
Thr Xaa His Xaa Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Xaa Glu
195 200 205
Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys
210 215 220
Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Xaa Leu Ser Asp Xaa
225 230 235 240
Pro Tyr Asp Ser Ala Xaa Tyr Glu Lys Glu Xaa Xaa Met Met Xaa Ser
245 250 255

```
His Val Met Asp Xaa Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala
            260                 265                 270
Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Xaa Ser Glu Val
        275                 280                 285
Val Pro Val Ile Ser Pro Met Tyr Gln Leu His Xaa Xaa Xaa Ser Xaa
    290                 295                 300
Gly Xaa Pro Arg Ser Asn His Ser Ala Gln Asp Xaa Ala Val Xaa Xaa
305                 310                 315                 320
Leu Leu Leu Leu Ser Lys Ala Lys Xaa Val Xaa Ser Glu Arg Glu Ala
                325                 330                 335
Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Xaa
            340                 345                 350
Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Xaa Xaa
        355                 360                 365
Xaa Ala Xaa Xaa Xaa Xaa Xaa Leu Lys Glu Glu Xaa Arg Ala Tyr Xaa
    370                 375                 380
Xaa Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Xaa Arg Val Val
385                 390                 395                 400
Ser Thr Ser Gly Glu Gln Xaa Lys Val Tyr Lys Cys Glu His Cys Arg
                405                 410                 415
Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Xaa Xaa Xaa
            420                 425                 430
Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr
        435                 440                 445
His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu
    450                 455                 460
His Arg Xaa His Xaa Ser
465                 470
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<210> 14
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> probe

<400> 14
agaagtttcc ataagatgat gaatgggggt ggcagaga 38

<210> 15
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 15
ggctgccacg gcttccgtga tcct 24

<210> 16
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetically generated primer

<400> 16
agcggtctgg ggaaacatct agga 24

<210> 17
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 17
agtaatgtta aagtagagac tcag 24

<210> 18
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 18
gtatgacttc ttttgtgaac catg 24

<210> 19
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 19
ccagcctctg agcccagaaa gcga 24

<210> 20
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 20
cactacctct ggagcacagc agaa 24

<210> 21
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 21
ggtgaacggc ctttccagtg c 21

<210> 22
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 22
tctgaggcat agagctctta c 21

<210> 23
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 23
catagggcat gtctgacagg cact 24

<210> 24
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 24
tcagcttttg ggaatgtatt ccctgtca 28

<210> 25
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 25
tcagcttttg agaataccct gtca 24

<210> 26
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 26
ggcatgactc agagcga 17

<210> 27
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 27
ccttcatctg gagtgtcact gactg 25

<210> 28
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 28
ctgaaacttg ggacatgtct tg 22

<210> 29
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 29
aaaggatccg aacataacta tggatcagcc 30

<210> 30
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 30
tttaccggtg tcttcaggtt atctcctgc 29

<210> 31
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 31
cgtaaaggcc acaagttca 19

<210> 32

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 32
cttgaagttc accttgatgc 20

<210> 33
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 33
tcgacgatcg atcgatcgat cataacttcg tataatgtat gctatacgaa gttattaagc 60
tt 62

<210> 34
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 34
gatccataac ttcgtataat gtatgctata cgaagttatt t 41

<210> 35
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetically generated primer

<400> 35
ctagaaataa cttcgtatag catacattat acgaagttat ggatcc 46

<210> 36
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary motif

<221> VARIANT
<222> (1)...(21)
<223> Xaa = Any Amino Acid

<400> 36

Cys Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15
His Xaa Xaa Xaa His
20

<210> 37
<211> 431
<212> PRT
<213> Mus musculus

<400> 37
Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
1 5 10 15
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
20 25 30
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
35 40 45
Ser Asp Arg Gly Met Gly Gln Arg Pro Phe Gln Cys Asn Gln Ser Gly
50 55 60
Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His
65 70 75 80
Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg
85 90 95
Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys
100 105 110
Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Ser Ser
115 120 125
Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly
130 135 140
Leu Pro Gly Val Cys Pro Val Ile Lys Glu Glu Thr Asn His Asn Glu
145 150 155 160
Met Ala Glu Asp Leu Cys Lys Ile Gly Ala Glu Arg Ser Leu Val Leu
165 170 175
Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro Gln
180 185 190
Lys Phe Leu Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser Ala
195 200 205
Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met Asp Gln Ala
210 215 220
Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro Leu
225 230 235 240
Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser Ser
245 250 255
Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser Asn
260 265 270
His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Leu Ser Lys Ala
275 280 285
Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys Gln
290 295 300
Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly Leu
305 310 315 320
Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn Gly Leu Ala
325 330 335
Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser Glu
340 345 350
Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln Leu
355 360 365

Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His Val
    370   375   380
Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly Phe Arg Asp
385   390   395   400
Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu
                405   410   415
Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser
            420   425   430

<210> 38
<211> 461
<212> PRT
<213> Homo sapiens

<400> 38
Asn Val Lys Val Glu Thr Gln Ser Asp Glu Glu Asn Gly Arg Ala Cys
 1   5   10   15
Glu Met Asn Gly Glu Glu Cys Ala Glu Asp Leu Arg Met Leu Asp Ala
            20   25   30
Ser Gly Glu Lys Met Asn Gly Ser His Arg Asp Gln Gly Ser Ser Ala
        35   40   45
Leu Ser Gly Val Gly Gly Ile Arg Leu Pro Asn Gly Lys Leu Lys Cys
    50   55   60
Asp Ile Cys Gly Ile Ile Cys Ile Gly Pro Asn Val Leu Met Val His
65   70   75   80
Lys Arg Ser His Thr Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly
                85   90   95
Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His
            100   105   110
Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg
        115   120   125
Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Gly Lys
    130   135   140
Pro His Lys Cys Gly Tyr Cys Gly Arg Ser Tyr Lys Gln Arg Thr Ser
145   150   155   160
Leu Glu Glu His Lys Glu Arg Cys His Asn Tyr Leu Glu Ser Met Gly
                165   170   175
Leu Pro Gly Thr Leu Tyr Pro Val Ile Lys Glu Glu Thr Lys His Ser
            180   185   190
Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu Val
        195   200   205
Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met Pro
    210   215   220
Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp Ser
225   230   235   240
Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met Asp
                245   250   255
Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg
            260   265   270
Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val Ile
        275   280   285
Ser Pro Met Tyr Gln Leu His Arg Arg Ser Glu Gly Thr Pro Arg Ser
    290   295   300
Asn His Ser Ala Gln Asp Ser Ala Val Glu Tyr Leu Leu Leu Leu Ser
305   310   315   320
Lys Ala Lys Leu Val Pro Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser
                325   330   335

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Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Asn Glu Glu Gln Arg Ser
            340                 345                 350
Gly Leu Ile Tyr Leu Thr Asn His Ile Ala Arg Arg Ala Gln Arg Val
        355                 360                 365
Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala Ser
    370                 375                 380
Glu Asn Ser Gln Asp Ala Leu Arg Val Val Ser Thr Ser Gly Glu Gln
385                 390                 395                 400
Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His
                405                 410                 415
Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro Phe
            420                 425                 430
Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser
        435                 440                 445
Ser His Ile Thr Arg Gly Glu His Arg Phe His Met Ser
    450                 455                 460

<210> 39
<211> 432
<212> PRT
<213> Mus musculus

<400> 39
Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
 1               5                  10                  15
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
            20                  25                  30
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
        35                  40                  45
Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp
    50                  55                  60
Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu
65                  70                  75                  80
Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His
                85                  90                  95
Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu
            100                 105                 110
Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly
        115                 120                 125
Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro
    130                 135                 140
Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu
145                 150                 155                 160
Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His
                165                 170                 175
Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu
            180                 185                 190
Arg Thr His Ser Gly Asp Lys Cys Leu Ser Asp Met Pro Tyr Asp Ser
        195                 200                 205
Ala Asn Tyr Glu Lys Glu Asp Met Met Thr Ser His Val Met Asp Gln
    210                 215                 220
Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu Arg Pro
225                 230                 235                 240
Leu Val Gln Thr Pro Pro Gly Ser Ser Glu Val Val Pro Val Ile Ser
                245                 250                 255
Ser Met Tyr Gln Leu His Lys Pro Pro Ser Asp Gly Pro Pro Arg Ser
            260                 265                 270
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Asn His Ser Ala Gln Asp Ala Val Asp Asn Leu Leu Leu Leu Ser Lys
275 280 285
Ala Lys Ser Val Ser Ser Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys
290 295 300
Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala Glu Glu Gln Arg Ser Gly
305 310 315 320
Leu Ile Tyr Leu Thr Asn His Ile Asn Pro His Ala Arg Asn Gly Leu
325 330 335
Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu Val Leu Arg Ala Ala Ser
340 345 350
Glu Asn Ser Gln Asp Ala Phe Arg Val Val Ser Thr Ser Gly Glu Gln
355 360 365
Leu Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp His
370 375 380
Val Met Tyr Thr Ile His Met Gly Cys His Gly Cys His Gly Phe Arg
385 390 395 400
Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr
405 410 415
Glu Phe Ser Ser His Ile Thr Arg Gly Glu His Arg Tyr His Leu Ser
420 425 430

<210> 40
<211> 518
<212> PRT
<213> Mus musculus

<400> 40
Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
1 5 10 15
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
20 25 30
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
35 40 45
Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp
50 55 60
Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu
65 70 75 80
Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His
85 90 95
Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu
100 105 110
Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly
115 120 125
Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro
130 135 140
Phe Gln Cys Asn Gln Ser Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu
145 150 155 160
Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His
165 170 175
Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu
180 185 190
Arg Thr His Ser Val Gly Lys Pro His Lys Cys Gly Tyr Cys Gly Arg
195 200 205
Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His Lys Glu Arg Cys His
210 215 220
Asn Tyr Leu Glu Ser Met Gly Leu Pro Gly Val Cys Pro Val Ile Lys
225 230 235 240

Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly
245 250 255
Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys
260 265 270
Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser
275 280 285
Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr
290 295 300
Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly
305 310 315 320
Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu
325 330 335
Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser
340 345 350
Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn
355 360 365
Leu Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala
370 375 380
Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala
385 390 395 400
Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro
405 410 415
His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu
420 425 430
Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val
435 440 445
Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg
450 455 460
Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly Cys His
465 470 475 480
Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr
485 490 495
His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu
500 505 510
His Arg Tyr His Leu Ser
515

<210> 41
<211> 390
<212> PRT
<213> Mus musculus

<400> 41
Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
1 5 10 15
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
20 25 30
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
35 40 45
Ser Asp Arg Gly Met Gly Glu Arg Pro Phe Gln Cys Asn Gln Ser Gly
50 55 60
Ala Ser Phe Thr Gln Lys Gly Asn Leu Leu Arg His Ile Lys Leu His
65 70 75 80
Ser Gly Glu Lys Pro Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg
85 90 95
Arg Arg Asp Ala Leu Thr Gly His Leu Arg Thr His Ser Val Ile Lys
100 105 110

Glu Glu Thr Asn His Asn Glu Met Ala Glu Asp Leu Cys Lys Ile Gly
115 120 125
Ala Glu Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys
130 135 140
Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Cys Leu Ser
145 150 155 160
Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met Met Thr
165 170 175
Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly
180 185 190
Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser Ser Glu
195 200 205
Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro Pro Ser
210 215 220
Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val Asp Asn
225 230 235 240
Leu Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg Glu Ala
245 250 255
Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Ala
260 265 270
Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Asn Pro
275 280 285
His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala Tyr Glu
290 295 300
Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg Val Val
305 310 315 320
Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His Cys Arg
325 330 335
Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly Cys His
340 345 350
Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly Tyr
355 360 365
His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly Glu
370 375 380
His Arg Tyr His Leu Ser
385 390

<210> 42
<211> 376
<212> PRT
<213> Mus musculus

<400> 42
Met Asp Val Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
1 5 10 15
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
20 25 30
Val Pro Glu Asp Leu Ser Thr Thr Ser Gly Ala Gln Gln Asn Ser Lys
35 40 45
Ser Asp Arg Gly Met Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp
50 55 60
Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu
65 70 75 80
Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His
85 90 95
Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu
100 105 110

Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Val Cys Ile Gly
115 120 125
Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Asp Lys Cys
130 135 140
Leu Ser Asp Met Pro Tyr Asp Ser Ala Asn Tyr Glu Lys Glu Asp Met
145 150 155 160
Met Thr Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr
165 170 175
Leu Gly Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly Ser
180 185 190
Ser Glu Val Val Pro Val Ile Ser Ser Met Tyr Gln Leu His Lys Pro
195 200 205
Pro Ser Asp Gly Pro Pro Arg Ser Asn His Ser Ala Gln Asp Ala Val
210 215 220
Asp Asn Leu Leu Leu Leu Ser Lys Ala Lys Ser Val Ser Ser Glu Arg
225 230 235 240
Glu Ala Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser
245 250 255
Asn Ala Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn His Ile
260 265 270
Asn Pro His Ala Arg Asn Gly Leu Ala Leu Lys Glu Glu Gln Arg Ala
275 280 285
Tyr Glu Val Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala Phe Arg
290 295 300
Val Val Ser Thr Ser Gly Glu Gln Leu Lys Val Tyr Lys Cys Glu His
305 310 315 320
Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His Met Gly
325 330 335
Cys His Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys
340 345 350
Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg
355 360 365
Gly Glu His Arg Tyr His Leu Ser
370 375

<210> 43
<211> 334
<212> PRT
<213> Mus musculus

<400> 43
Gly Glu Arg Pro Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln
1 5 10 15
Lys Gly Asn Leu Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro
20 25 30
Phe Lys Cys His Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu
35 40 45
Thr Gly His Leu Arg Thr His Ser Val Ile Lys Glu Glu Thr Lys His
50 55 60
Ser Glu Met Ala Glu Asp Leu Cys Lys Ile Gly Ser Glu Arg Ser Leu
65 70 75 80
Val Leu Asp Arg Leu Ala Ser Asn Val Ala Lys Arg Lys Ser Ser Met
85 90 95
Pro Gln Lys Phe Leu Gly Asp Lys Gly Leu Ser Asp Thr Pro Tyr Asp
100 105 110
Ser Ala Thr Tyr Glu Lys Glu Asn Glu Met Met Lys Ser His Val Met
115 120 125

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Asp Gln Ala Ile Asn Asn Ala Ile Asn Tyr Leu Gly Ala Glu Ser Leu
    130                 135                 140
Arg Pro Leu Val Gln Thr Pro Pro Gly Gly Ser Glu Val Val Pro Val
145                 150                 155                 160
Ile Ser Pro Met Tyr Gln Leu His Arg Arg Ser Glu Gly Thr Pro Arg
                165                 170                 175
Ser Asn His Ser Ala Gln Asp Ser Ala Val Glu Tyr Leu Leu Leu Leu
            180                 185                 190
Ser Lys Ala Lys Leu Val Pro Ser Glu Arg Glu Ala Ser Pro Ser Asn
        195                 200                 205
Ser Cys Gln Asp Ser Thr Asp Thr Glu Ser Asn Asn Glu Glu Gln Arg
    210                 215                 220
Ser Gly Leu Ile Tyr Leu Thr Asn His Ile Ala Arg Arg Ala Gln Arg
225                 230                 235                 240
Val Ser Leu Lys Glu Glu His Arg Ala Tyr Asp Leu Leu Arg Ala Ala
                245                 250                 255
Ser Glu Asn Ser Gln Asp Ala Leu Arg Val Val Ser Thr Ser Gly Glu
            260                 265                 270
Gln Met Lys Val Tyr Lys Cys Glu His Cys Arg Val Leu Phe Leu Asp
        275                 280                 285
His Val Met Tyr Thr Ile His Met Gly Cys His Gly Phe Arg Asp Pro
    290                 295                 300
Phe Glu Cys Asn Met Cys Gly Tyr His Ser Gln Asp Arg Tyr Glu Phe
305                 310                 315                 320
Ser Ser His Ile Thr Arg Gly Glu His Arg Phe His Met Ser
                325                 330
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